

$$F_{\nabla} = 2\pi \cdot r^3 \frac{\sqrt{\epsilon_B}}{c} \left(\frac{\epsilon - \epsilon_B}{\epsilon + 2\epsilon_B} \right) (\nabla \cdot I)$$

F_{∇} = Optical force on particle towards higher intensity

r = Radius of particle

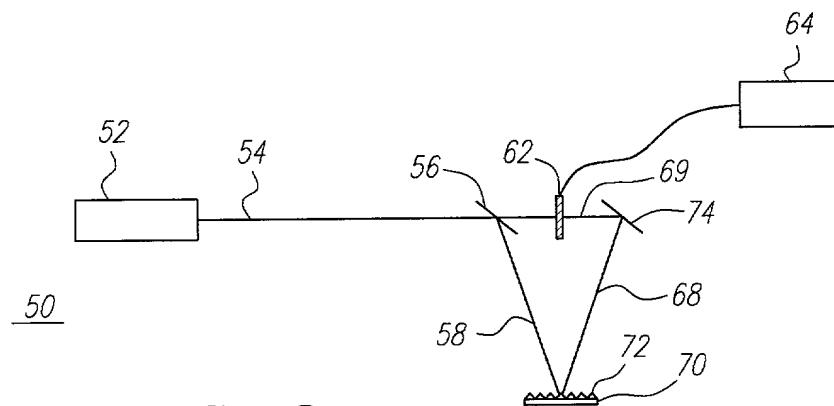
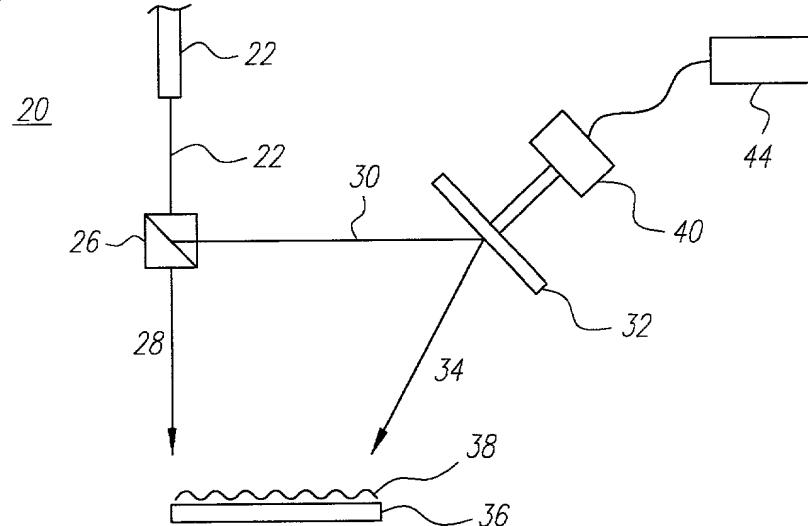
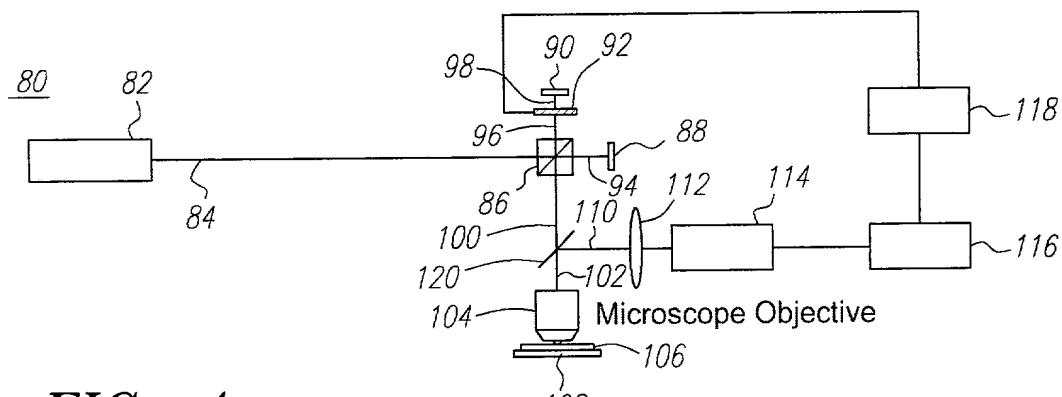
ϵ_B = Dielectric constant of background medium

ϵ = Dielectric constant of particle

I = Light intensity (W/cm^2)

∇ = Spatial derivative

FIG. 1

FIG. 2*FIG. 3**FIG. 4*

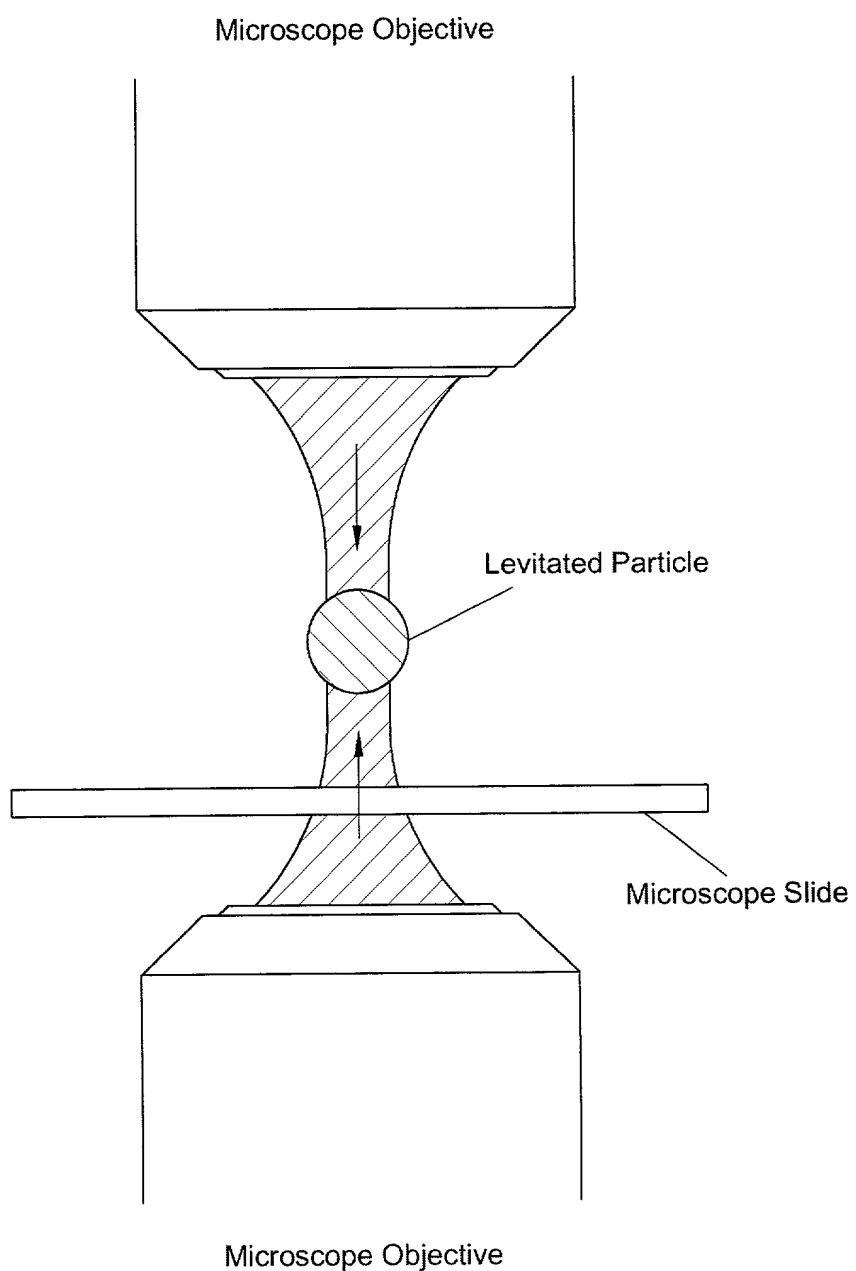


FIG. 4A

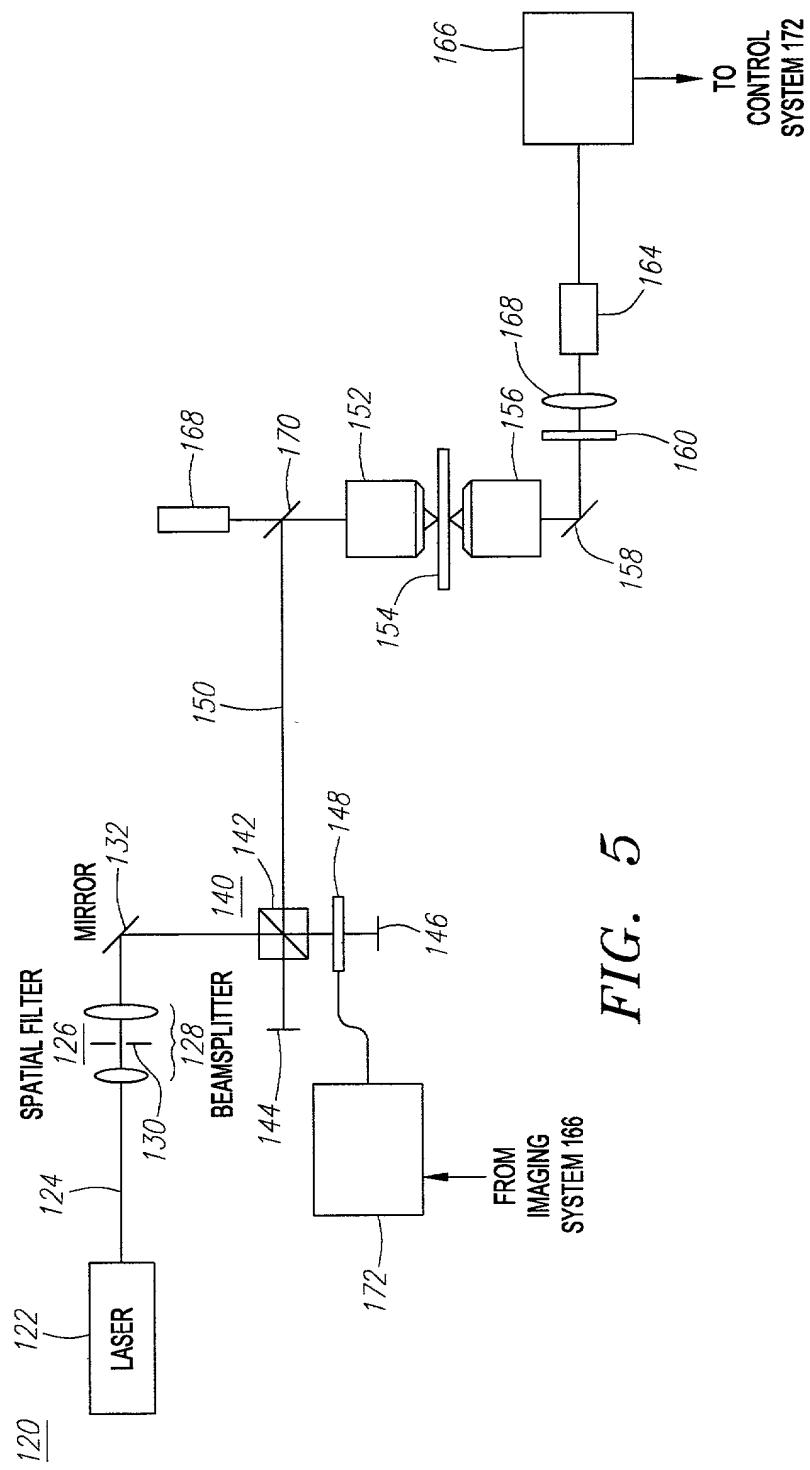


FIG. 5

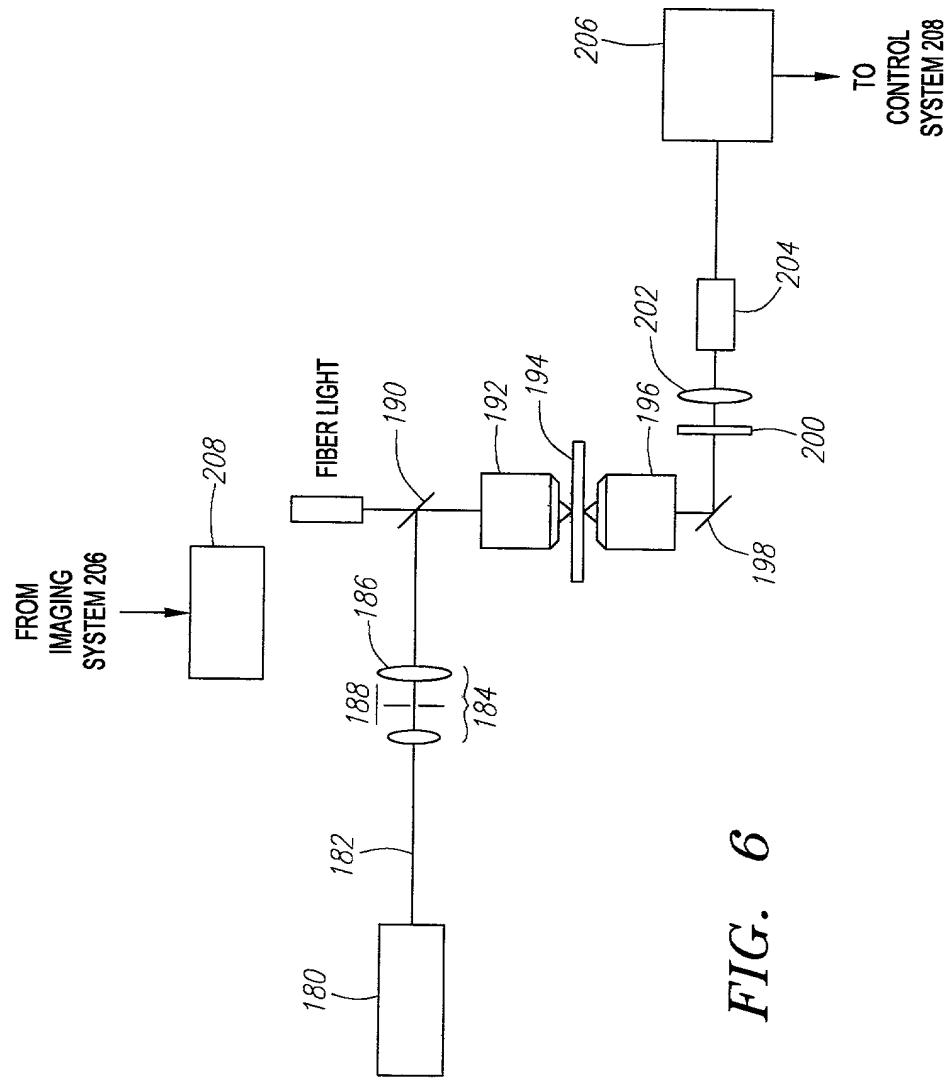
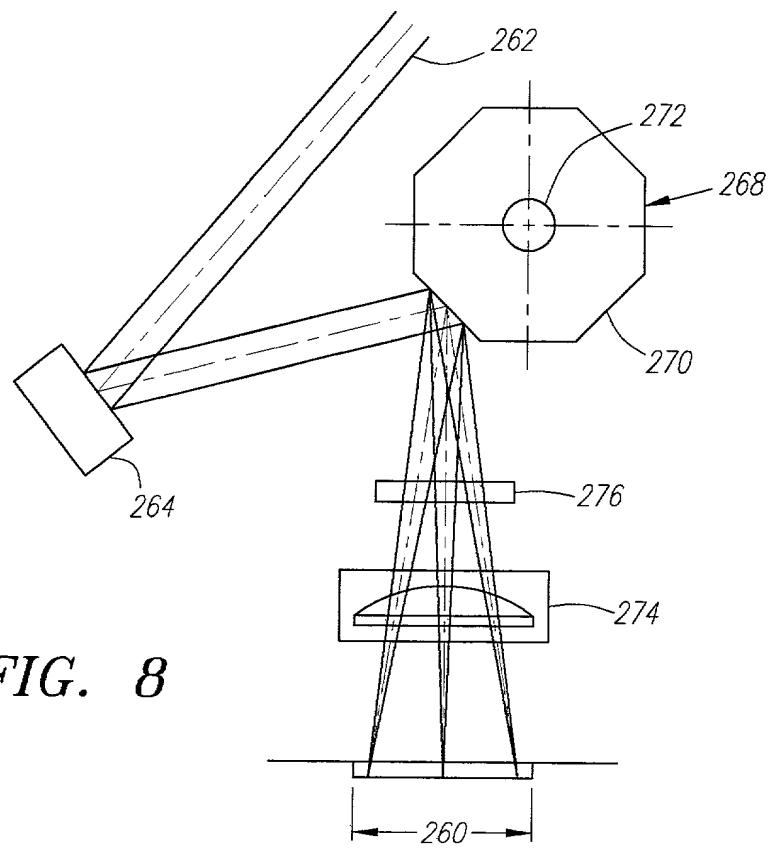
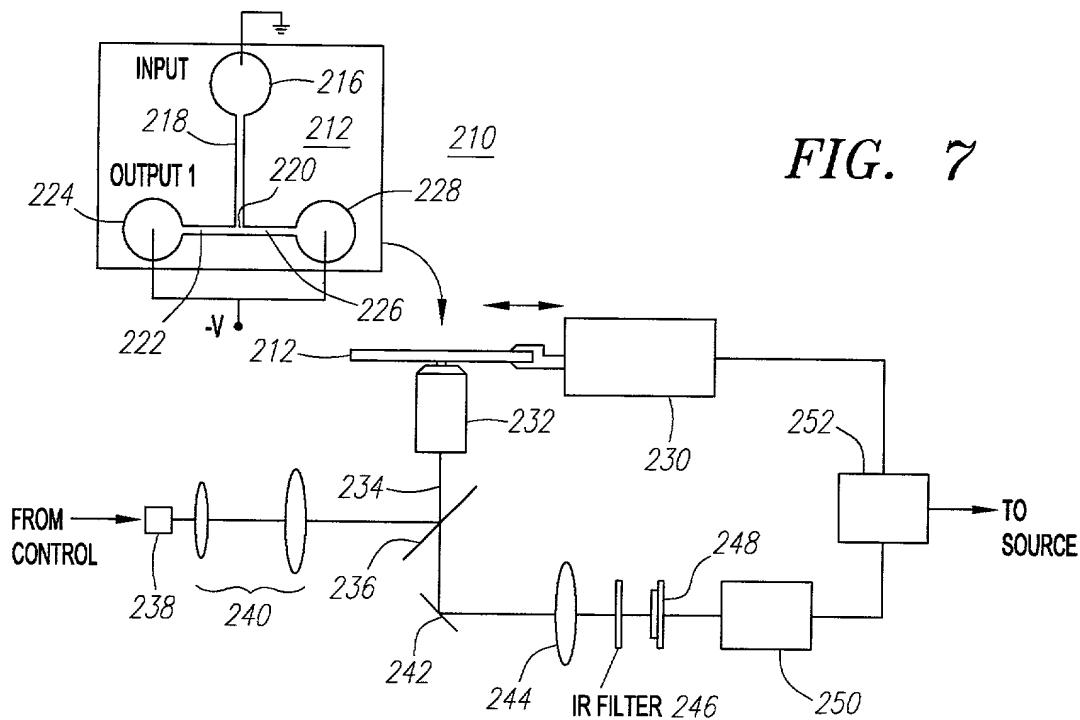


FIG. 6

**FIG. 8**

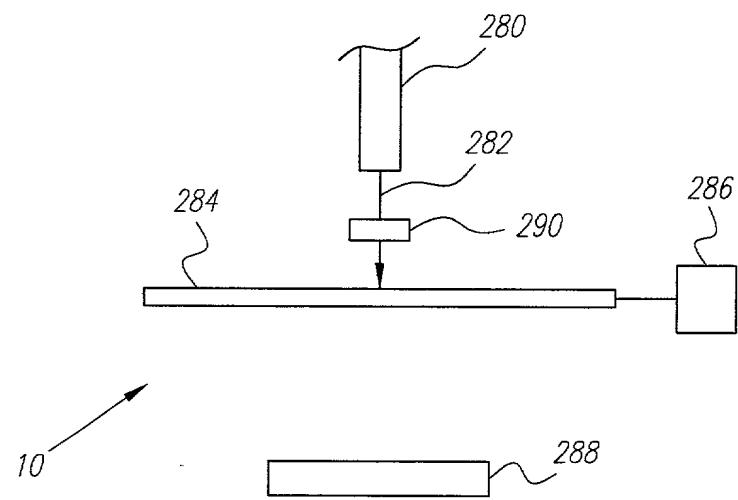


FIG. 9A

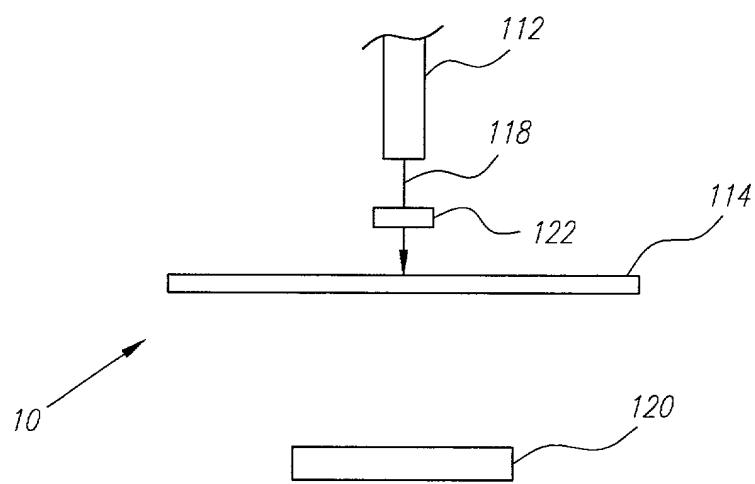


FIG. 9B

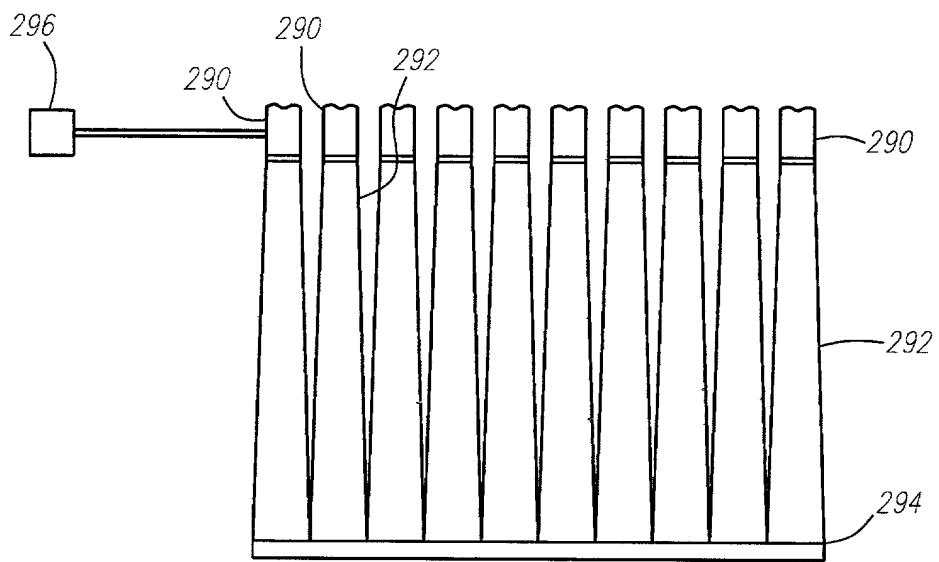


FIG. 10

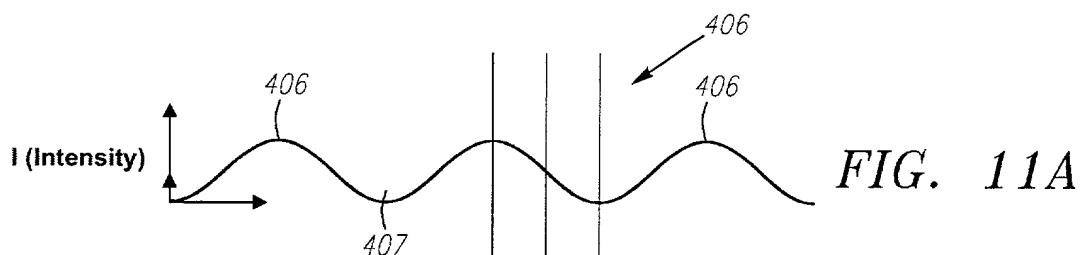


FIG. 11A

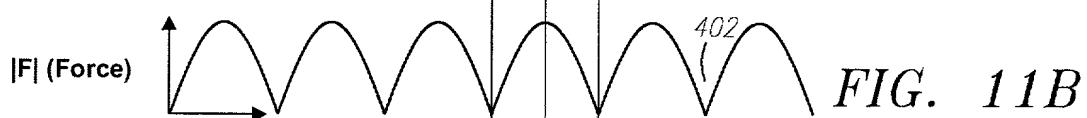


FIG. 11B

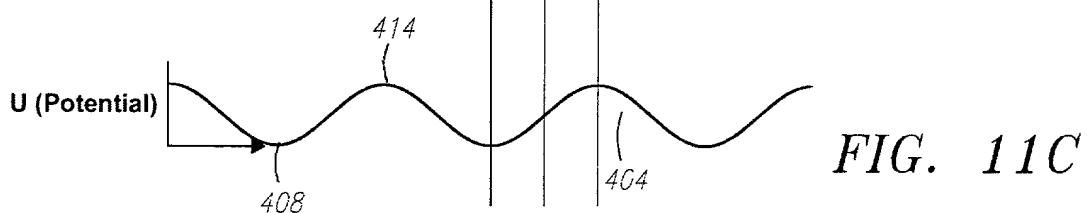


FIG. 11C

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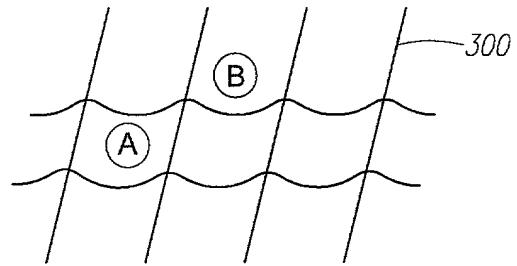


FIG. 12A

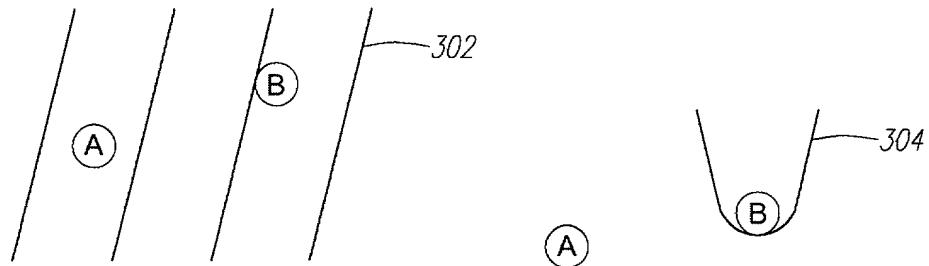


FIG. 12B

FIG. 12C

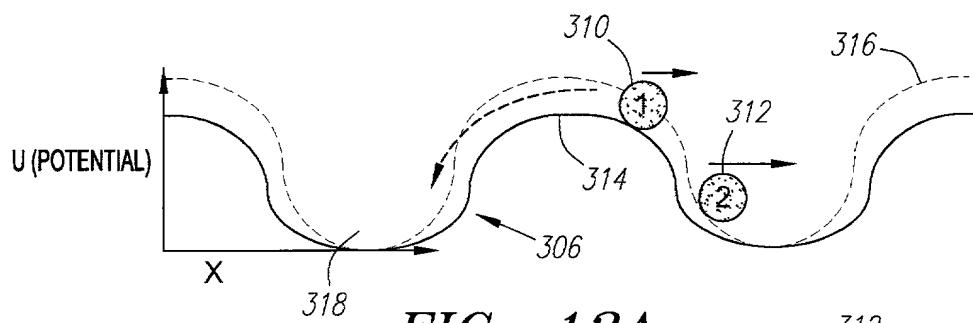


FIG. 13A

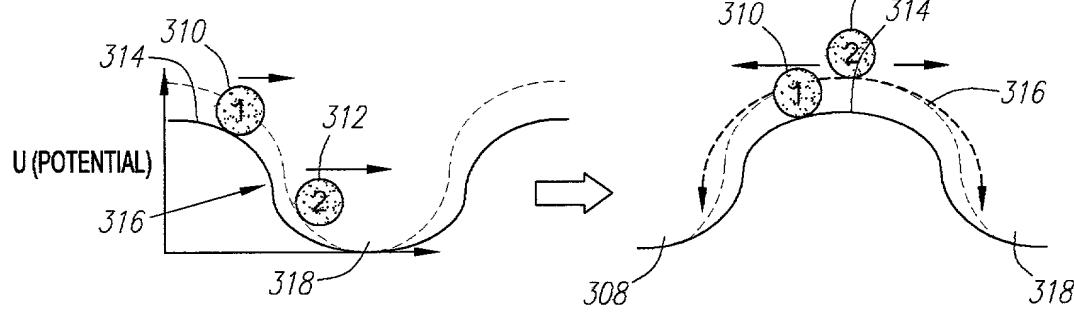


FIG. 13B

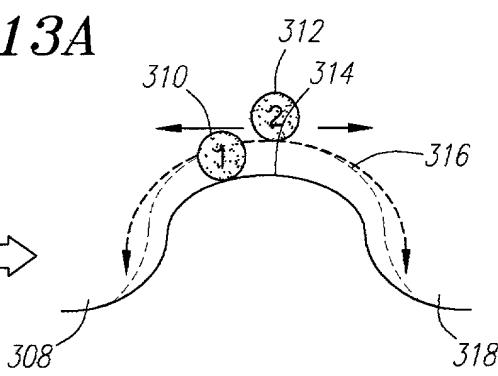
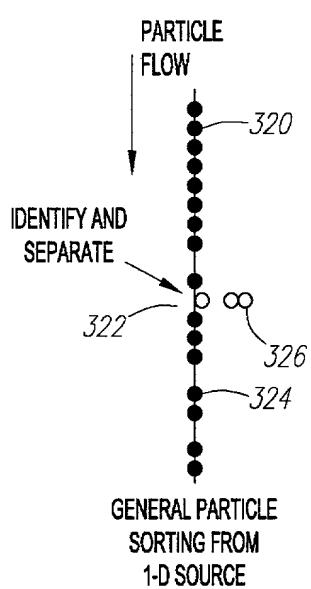
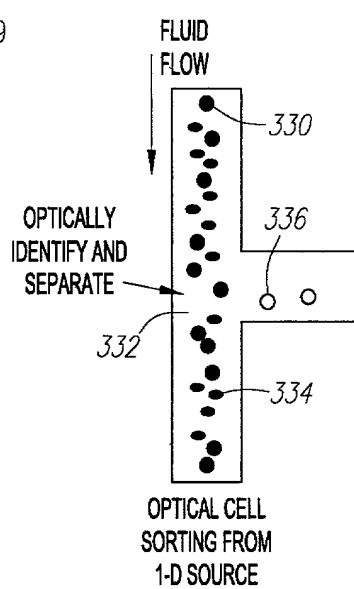
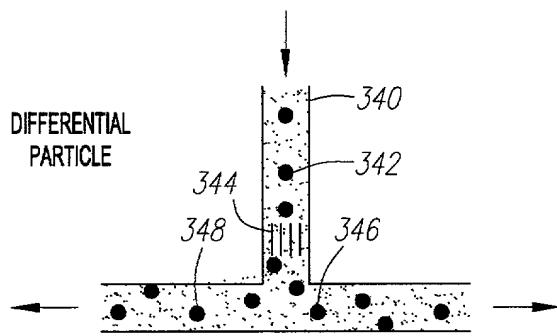
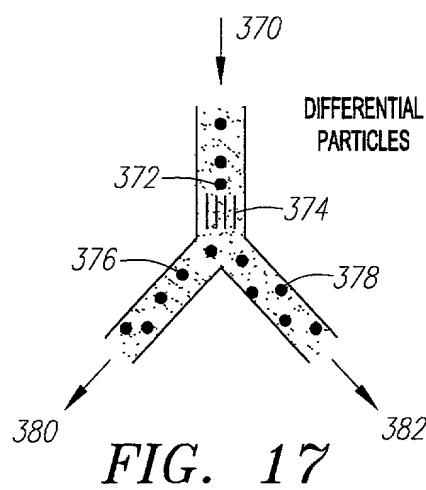
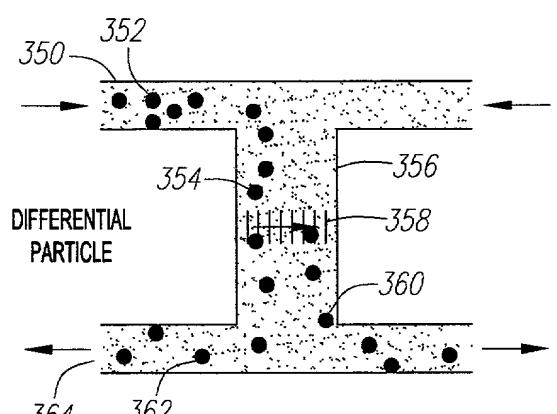
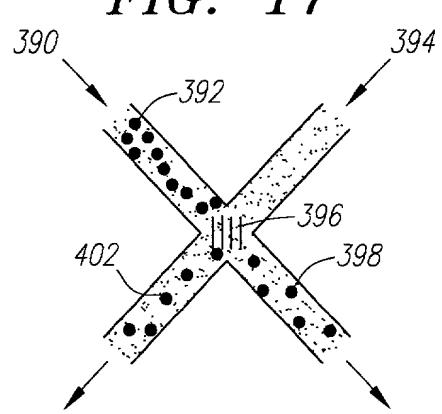


FIG. 13C

*FIG. 14A**FIG. 14B**FIG. 15**FIG. 17**FIG. 16**FIG. 18*

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OPTICALLY
IDENTIFY AND
SEPARATE
LINE AT A TIME

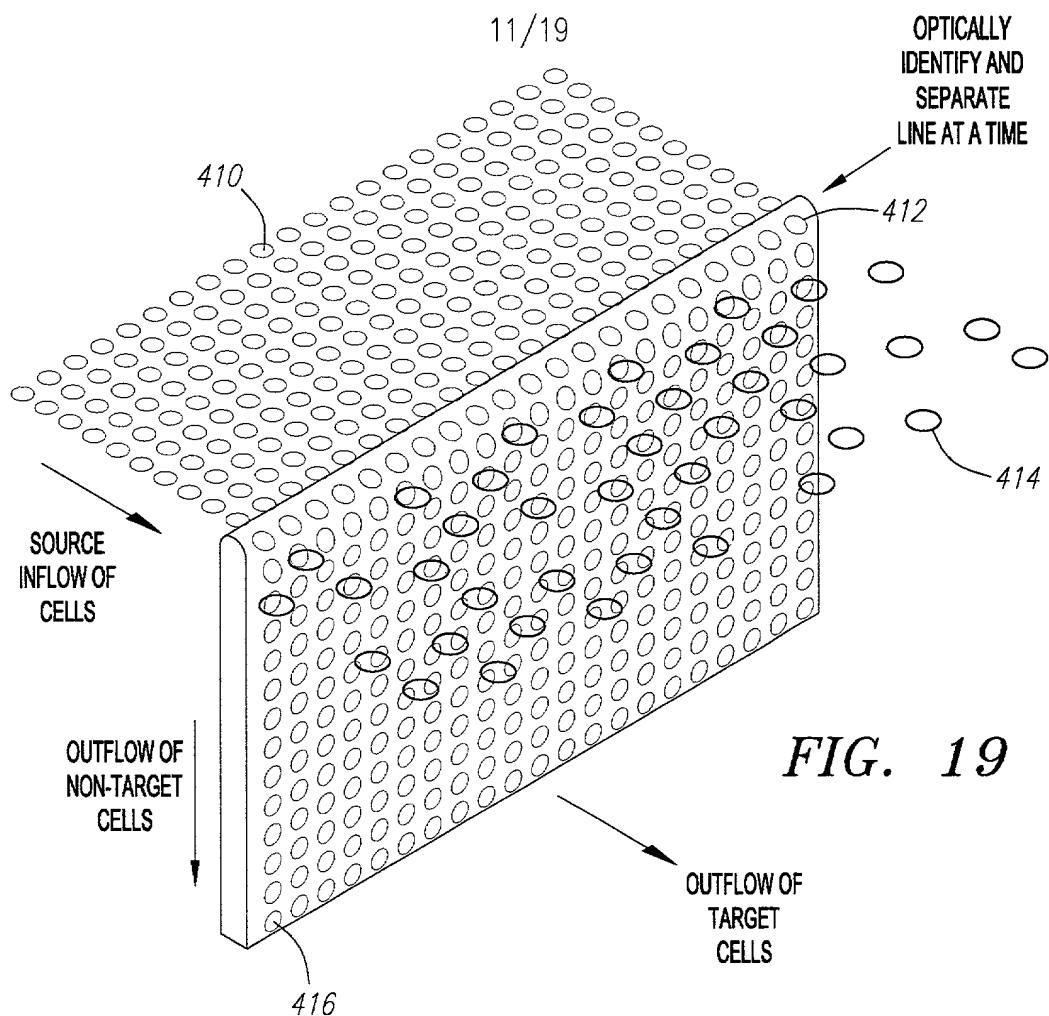
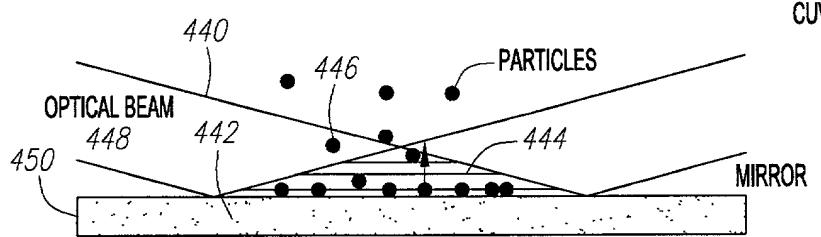
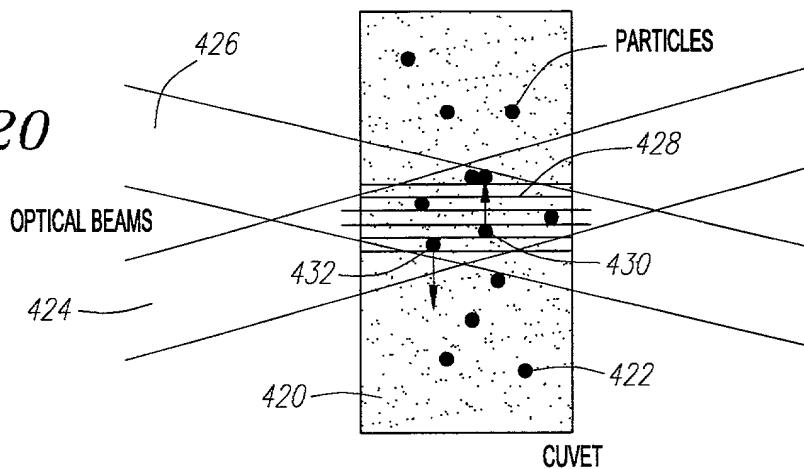


FIG. 20



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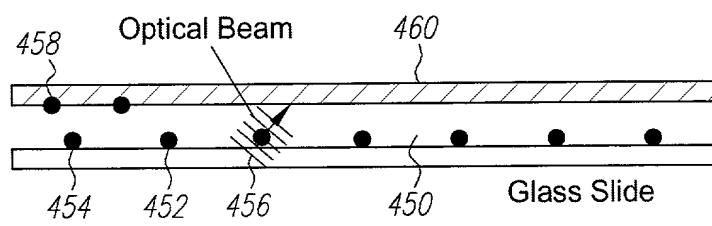
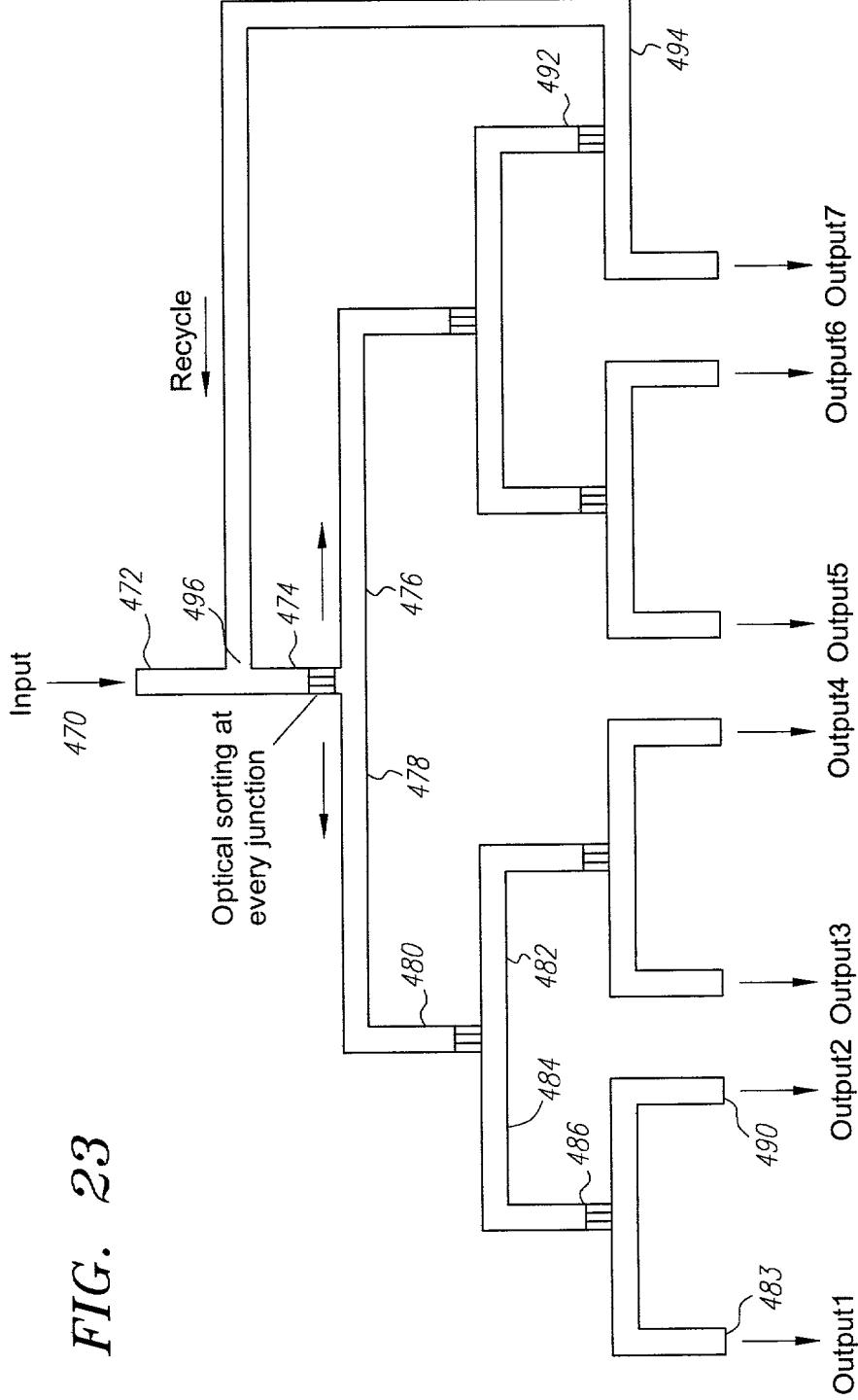


FIG. 22

FIG. 23



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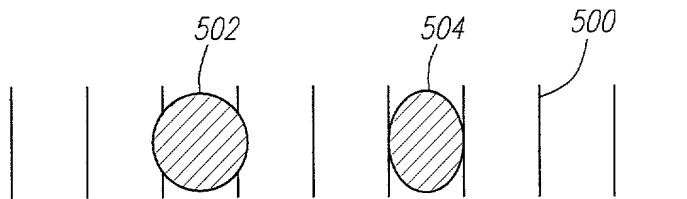


FIG. 24

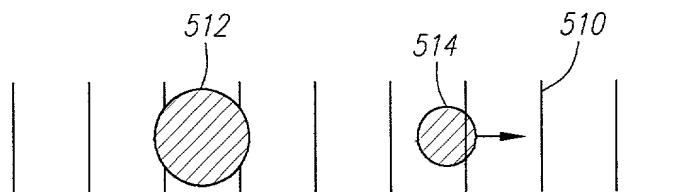
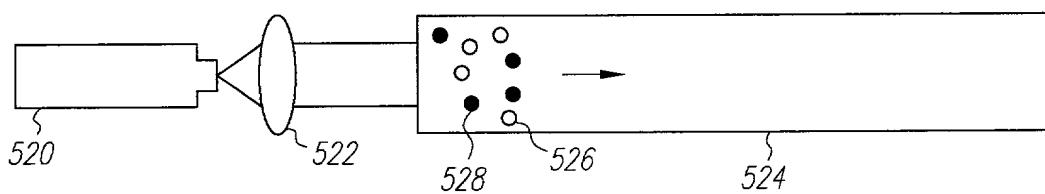


FIG. 25

Before:

SCATTER FORCE SEPARATION



After:

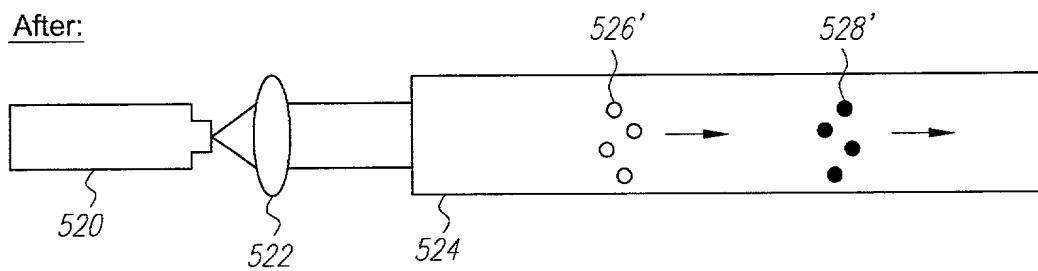
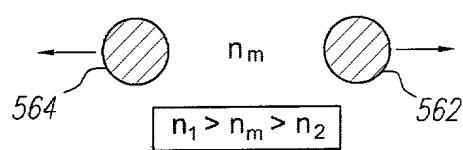
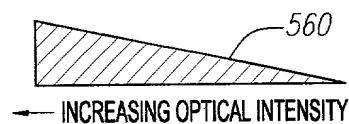
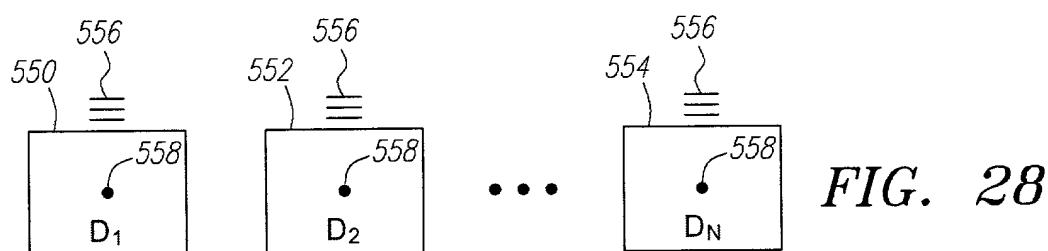
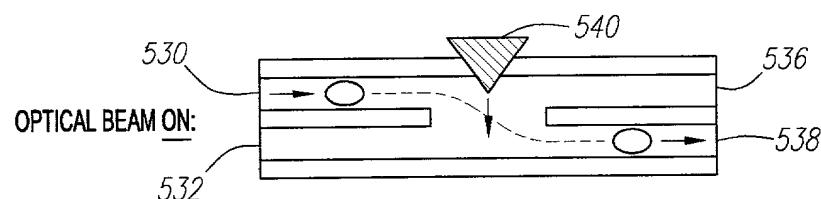
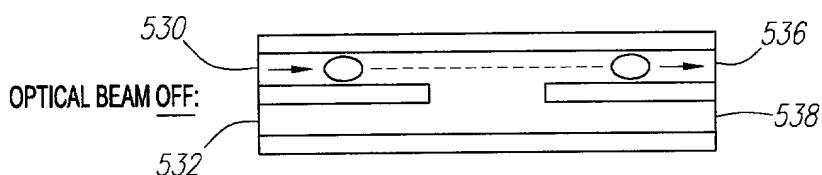
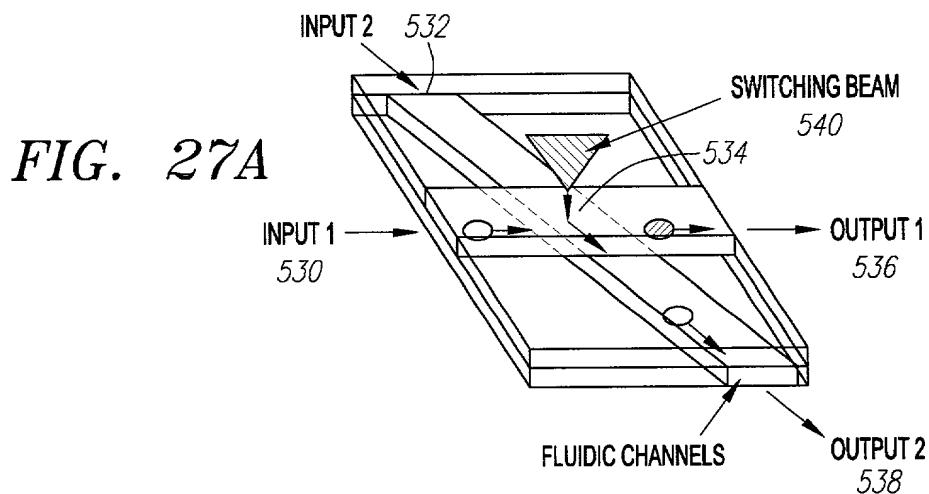


FIG. 26



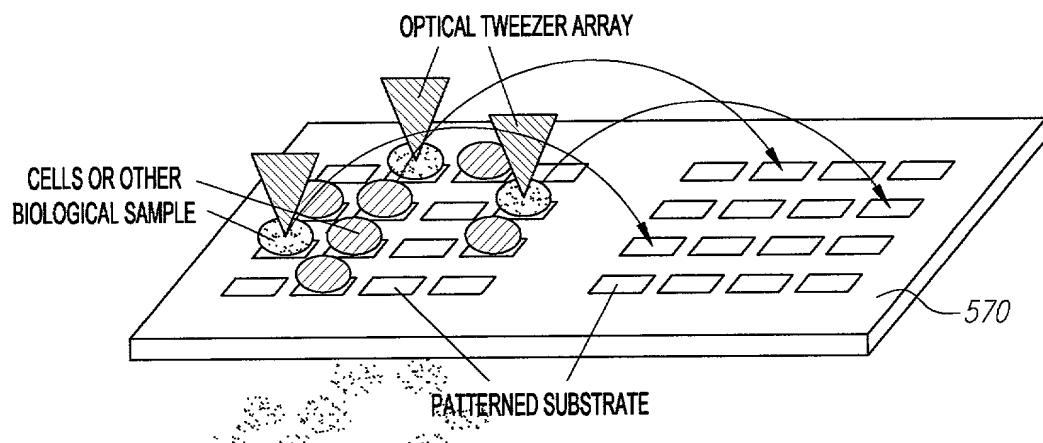


FIG. 30

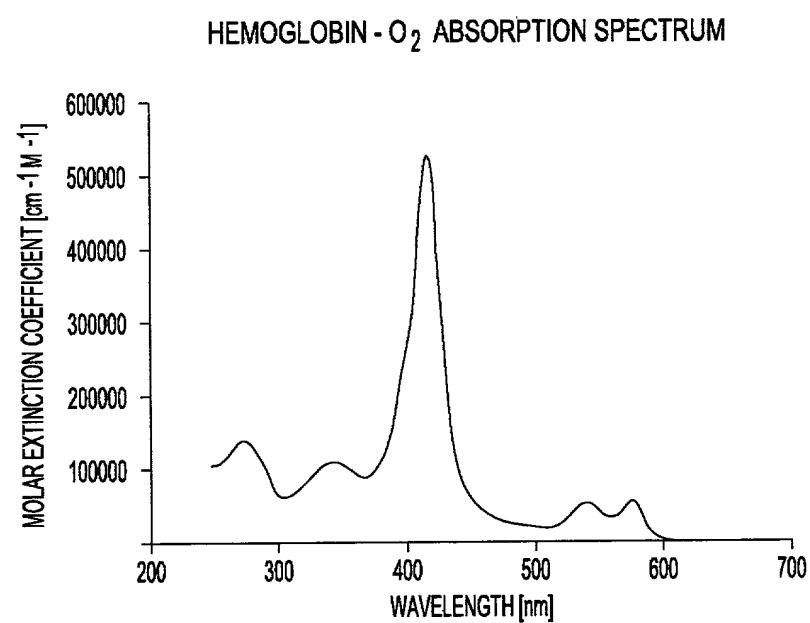


FIG. 31

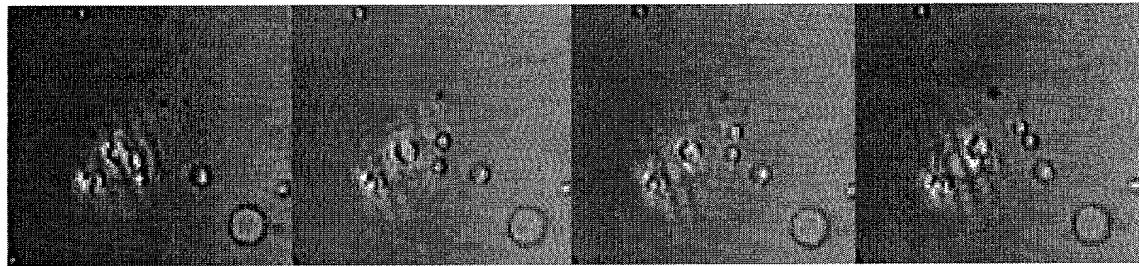


FIG. 32

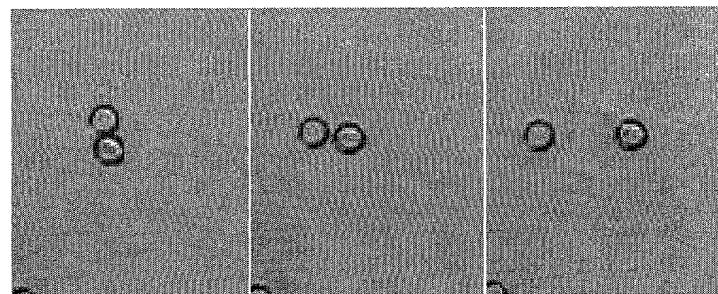
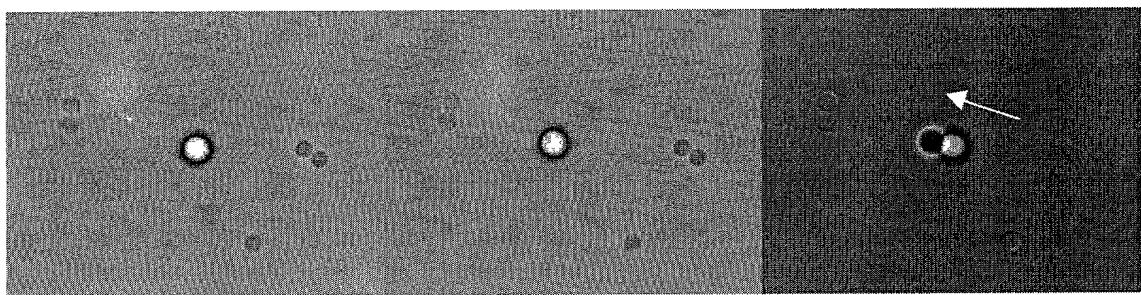


FIG. 33



Before

After

Difference

FIG. 34

DISTRIBUTION OF ESCAPE VELOCITIES
 READING TAKEN IN PBS/1% BSA BUFFER
 RAIN-X COATED SLIDE/CYTOSLIDE COATED COVERSHEET

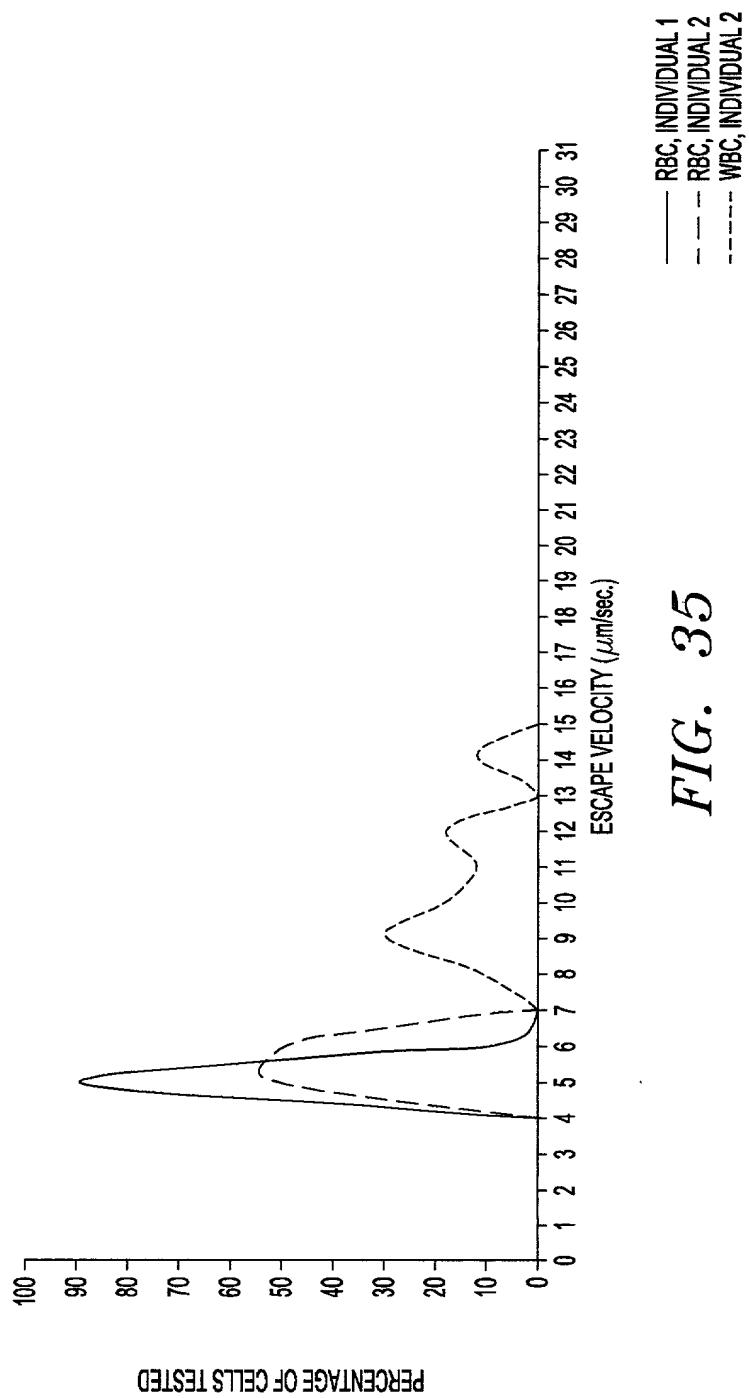


FIG. 35

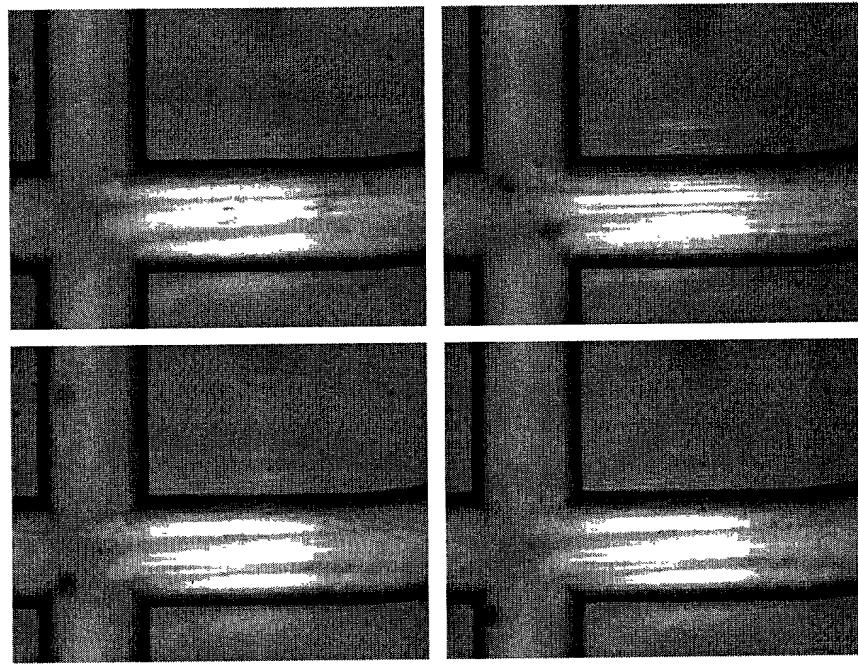


FIG. 36